phorylated derivatives of adenosine as a substitute for exercise in conjunction with cardiac imaging techniques used to detect the presence and/or assess the severity of ischemic ventricular dysfunction in humans.

--14. The method comprising the use of an agent which is adenosine, functional adenosine receptor agonists, metabolic precursors or by-products of adenosine, or phosphorylated derivatives of adenosine as a coronary hyperemic agent in conjunction with means for measuring coronary blood flow velocity to assess the vasodilatory capacity (reserve capacity) of coronary arteries in humans.

--15. The method of claim 12, 13 or 14 wherein the agent is adenosine.

--16. The method of claim 12 wherein myocardial perfusion imaging is performed by any one of several techniques including but not limited to radiopharmaceutical myocardial perfusion imaging, planar (conventional) scintigraphy, single photon emission computed tomography (SPECT), positron emission tomography (PET), nuclear magnetic resonance (NMR)imaging, perfusion contrast echocardiography, digital subtraction angiography (DSA), or ultrafast x-ray computed tomography (CINE CT).

--17. The method of claim 16 wherein the radiopharmaceutical is a physiologically compatible agent which includes but is not limited to thallium-201, technetium 99m, derivatives of technetium 99m, nitrogen-13, rubidium 82, iodine-123 or iodine-131.

--18. The method of claim 13 wherein ischemic ventricular dysfunction is measured by any one of several imaging techniques including but not limited to echocardiography, contrast ventriculography, or radionuclide angiography.

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--19. The method of claim ~~14~~ wherein coronary blood flow velocity is measured by any one of several techniques including Doppler flow catheter, digital subtraction angiography or other radiopharmaceutical imaging technique.

--20. The method of claim 12, 13, or 14 wherein the agent is administered intra-arterially or intravenously, by bolus injection or continuous infusion.

--21. The method of claims 12, 13 or 14 wherein the agent is administered parenterally in doses ranging from 20 - 300 mcg/kg/min (intravenously) or 2 - 20 mcg as a bolus (intracoronary).